UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,480	06/06/2001	Nikil Jayant	062004-1770	7949

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EXAMINER
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ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 07/21/2004   20

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		Applicant(s)	
Office Action Summary	09/875,480		JAYANT ET AL.	
	Examiner		Art Unit	
	Shawn S An		2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **3** MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *14 May 2004*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *17-62* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *36-55* is/are allowed.

6) ☒ Claim(s) *17-35 and 60-62* is/are rejected.

7) ☒ Claim(s) *56-59* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   As per Applicant's instructions in Paper 19 as filed on 5/14/04, claims 17, 22, 26, and 32 have been amended, and claims 56-62 have been newly added.

Response to Remarks

2.   Applicants' arguments with respect to amended claims as above have been carefully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 17-19, 22-23, 26-28, 32-33, and 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monro et al (6,078,619) in view of Vijayan et al (6,151,296).

Regarding claims 17, 22-23, 26-27, 32, and 33, Monro et al discloses a system/method and computer readable medium (abs.) for communication of video information, comprising:

a first object oriented coder (Fig. 1) for dividing data into object and background macroblocks (34), the object and background macroblocks being a portion of partitioned video-data that is transmitted at a bit-rate (42);   and

means for assigning/allocating (42) a higher number of bits to the object macroblock than to the background macroblocks based on threshold of the bit rate of the partitioned video-data (col. 2, lines 60-63; col. 5, lines 30-37; col. 6, lines 7-11).

Furthermore, Monro et al discloses providing some level of error protection (col. 6, lines 49-54), and error thresholds in rate buffering and the object separator module for limiting the effects of camera noise (col. 7, lines 20-22).

Moreover, Vijayan et al teaches a bit interleaving apparatus for providing error correction such as Reed Solomon encoder (Fig. 2, 22) and an interleaver (Fig. 2, 24).

Therefore, it clearly would have been considered obvious to a person of ordinary skill in the relevant art employing system/method for communication of video data as taught by Monro et al to incorporate the conventionally well known concept of Vijayan et al's error control to the object macroblocks and the background macroblocks, thereby assigning, as a result, a higher number of error control overhead bits to the object macroblocks than to the background macroblocks, since Monro's object macroblocks have been assigned higher number of bits, ultimately reducing error protection overhead bits for background macroblocks, thereby drastically improving the quality of the video.

Regarding claims 18, 28, Monro et al discloses a first processor (34) and a memory (42).

Regarding claim 19, it is considered an obvious design choice to simply add an identical object coder (second) that allocates a higher number of bits to the object macroblock than to the background macroblocks.

Regarding claims 60-61, the Examiner takes Official notice that correcting error introduced by distortions in the coded image by way of determining a threshold in the SNR of the macroblocks is conventionally well known in the art.

Regarding claim 62, it is considered an obvious feature for an user to simply determine the level of distortion by observation.

5.   Claims 20-21, 24-25, 29-31, and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monro et al and Vijayan et al as applied to claims 17, 22, 26, and 32 above, respectively, and further in view of Kato (6,415,055 B1).

Regarding claims 20, 24, 29, and 34, The combination of Monro et al and Vijayan et al fails to disclose a third object oriented coder that receives a location vector and at least one motion vector of an object macroblock in a previous frame, the location vector and the at least one motion vector of an object macroblock that is missing in a current frame, and replacing the object macroblock that is missing in the current frame with the object macroblock in the previous frame.

However, Kato teaches a location vector and at least one motion vector (Fig. 8, 6) of macroblock in a previous frame (7A), the location vector and the at least one motion vector (Fig. 8, 6) of an macroblock that is missing in a current frame (7B), and replacing the macroblock that is missing in the current frame with the macroblock in the previous frame (col. 4, lines 44-63).

Therefore, it would have been obvious to a person of ordinary skill in the art employing a system/method for communication of video data as taught by Monro et al to incorporate the well known concept of locating motion vector of macroblock in a previous frame and locating motion vector of an macroblock that is missing in a current frame, and replacing the macroblock that is missing in the current frame with the macroblock in the previous frame as taught by Kato so that by adopting Kato's encoder (use it as a second/third object coder) for locating the motion vector of object macroblock in a previous frame, and locating the motion vector of an object macroblock that is missing in a current frame, and replacing the macroblock that is missing in the current frame with the macroblock in the previous frame in order to further improve the performance of the object oriented coder, thus enhancing quality, and to allow more effective video messaging.

Regarding claims 21, 25, 30-31, and 35, Kato teaches a quantization factor (Fig. 8, 13) for receiving more location vectors and motion vectors.

Allowable Subject Matter

6.   Claims 36-55 are allowed.

7.   Claims 36-55 recite the novel features comprising a first object oriented coder that

divides data into object macroblocks and background macroblocks,

receives a location vector and at least one motion vector of an object macroblock in a previous frame, the location vector and the at least one motion vector corresponds to location of the object macroblock that is missing in the current frame, and replaces the object macroblock that is missing in the current frame with the object macroblock in the previous frame;

wherein the first object oriented coder assigns a quantization factor a value that provides for receiving more location vectors and motion vectors of an object macroblock.

The art of record fails to anticipate or make obvious the novel features as specified in claims 36-55.

8.   Claims 56-59 are objected to as being dependent upon a rejected base claims 17, 22, 26, and 32, respectively, but would be allowable: if claim 56 is rewritten in independent form including all of the limitations of the base claim 17 and any intervening claims; and if claim 57 is rewritten in independent form including all of the limitations of the base claim 22 and any intervening claims; and if claim 58 is rewritten in independent form including all of the limitations of the base claim 26 and any intervening claims; and if claim 59 is rewritten in independent form including all of the limitations of the base claim 32 and any intervening claims.

Dependent claims 56-59, recite the novel features comprising:
evaluating whether the bit-rate of the partitioned video data is less than a bit rate of the non-partitioned video data, and if so, assigning a higher number of error control overhead bits to the object macroblock than to the background macroblocks.

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10.   The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

A) Miyake et al (5,117,427), Communication system with concatenated coding error correction.

B) Todoroki (5,465,267), Error-correcting tandem encoding system.

C) Huang (5,475,716), Method for communicating block coded digital data with associated synchronization/control data.

11.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn S An whose telephone number is 703-305-0099. The examiner can normally be reached on Flex hours (10).

12.   The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

13   Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

SSA
Primary Patent Examiner
7/18/04